

# 第七届中国能效论坛

The 7<sup>th</sup> China-U.S. Energy Efficiency Forum

## 创新监管机制 提升监管效能 构建安全节能环保三位一体的锅炉监管体系

Innovate supervision mechanism, Improve regulatory efficiency  
Establish trebling position integration boiler regulatory system  
of Safety, Energy-conservation and environmental protection

国家质量监督检验检疫总局 特种设备安全监察局 高继轩

SPECIAL EQUIPMENT SAFETY SUPERVISION BUREAU OF AQSIQ

GAOJIXUAN

# 目录 Content

**01**

## 中国锅炉节能监管工作基本情况

**Basic situation about boiler energy conservation supervision in China**

**02**

## 质检总局在创新监管机制方面的探索

**AQSIQ explore in the aspect of supervision mechanism innovation**

**03**

## “十三五” 锅炉节能减排之工作思考

**Consideration about boiler energy conservation and emission reduction in 13th FYP**



# 一、中国锅炉节能监管工作基本情况

---

**Basic situation about boiler energy conservation supervision in China**



## (一) 锅炉的基本情况 Boiler basic condition

锅炉是重要的能源转换设备，也是能源消费大户和重要的大气污染源。

Boiler is important energy conversion equipment, and also large energy consumer and important atmospheric pollution source.

根据我局统计，截止2015年底:

中国锅炉总数为57.92万台(total amount:579,200)

电站锅炉1.39万台(power station boilers:13,900)

工业锅炉56.53万台(industrial boilers:565,300)



## (一) 锅炉的基本情况 Boiler basic condition

**中国锅炉燃料以煤为主,具有以下特点：**

Boilers in China take coal as the principal fuel, Characteristics are as below:

**①数量多 ( 燃煤工业锅炉总数46.4万台 )**

Large amount (Coal-fired industrial boilers' amount reached about 464,000)

**②分布广 ( 各行业、各地区 )**

Wide distribution (Different industries and areas)

**③能耗高 ( 工业锅炉实际平均热效率仅为70% )**

High energy consuming (Industrial boiler average practical efficiency only reached 70%)

**④污染重 ( 污染物排放强度较大 )**

Heavy pollution (Large emission intensity)

**燃煤工业锅炉节能减排潜力巨大,如平均效率提高到80%以上, 年节约1亿吨以上原煤**

Huge potential of energy conservation and emission reduction, If the average thermal efficiency was increased from 70% to 80%, more than 100 million tons raw coal would be saved.

## (二) 质检总局开展的工作 Work carried out by AQSIQ

### 一是完善法规标准 Perfect the Law, Regulation and standard



## (二) 质检总局开展的工作 Work carried out by AQSIQ

### 二是加强监督检查 Strengthen the supervision and inspection

#### ——锅炉生产 Boiler production

①**锅炉设计文件节能审查**——审查内容：锅炉设计热效率 排烟温度 过量空气系数（对于不符合要求的，不得投入生产）

**Boiler design file energy conservation audit**——Including: boiler design thermal efficiency, flue gas temperature, excess air coefficient ( the unqualified file could not put into production. )

②**锅炉定型产品能效测试**——能效低于限定值的锅炉，禁止批量生产。

**Finalize design product energy efficiency test**——The boiler which energy efficiency is lower than the limit value could not put into quantity production.

③**调整锅炉能效限定值**——较大幅度提升锅炉产品能效限定值要求，严格限制低效锅炉进入市场（燃煤锅炉 $\geq 80\%$ ，燃气锅炉 $\geq 92\%$ ）

**Boiler energy efficiency limit value further improvement**——Boiler product thermal efficiency limit value would be significantly increased, inefficient boilers would be strictly restricted to access the market. (coal-fired boiler  $\geq 80\%$  , gas fired boiler  $\geq 92\%$ ).

## (二) 质检总局开展的工作 Work carried out by AQSIQ

### ——锅炉使用 Boiler operation

①**定期能效测试**——对在用锅炉要求每两年进行一次定期能效测试，效率不达标的，督促整改，通报其他监管部门。

**Boiler energy efficiency regular test**——In-using boiler was required to proceed energy efficiency regular test once every two years, if the efficiency is substandard, the boiler would be supervised to rectify, and Other regulatory ministries would be informed.

②**促进企业改善运行管理。推动锅炉系统安全节能标准化管理。**

Promote the enterprises to improve the operations management. Promote the boiler system safety and energy conservation standardization management.

③**提升锅炉运行人员能力。在锅炉作业人员考核中，增加节能减排的内容；开展专项节能培训。**

Boiler operation personnel capacity improving. Add the energy conservation and emissions reduction content In the boiler operation personnel assessment; To carry out the special energy conservation training.



## （二）质检总局开展的工作 Work carried out by AQSIQ

**三是加强部门联动**——在国家发改委统一部署下，积极推进燃煤锅炉节能环保综合提升工程

**Strengthen the department linkage**——Actively push forward coal-fired boiler energy conservation and environmental protection comprehensive promotion project under the uniform deployment of NDRC.

**①推广高效锅炉。**和国家发改委联合发布《高效节能锅炉推广目录》，并配合国家发改委研究相关支持政策。

**Efficient boiler promotion.** Jointly issued ‘Promotion Directory for High efficiency and energy conservation boiler’ and cooperate on research related support policy with NDRC.

**②淘汰落后锅炉。**为地方政府提供锅炉基础数据支持，及时注销锅炉使用登记证等。

**Backward boiler elimination.** Provide boiler foundation data support for the local government, timely cancelled the boiler utilization registration certificate, etc.

**③推进锅炉节能改造。**配合国家发改委研究制定加快推进燃煤工业锅炉节能改造的政策措施。

**Boiler energy conservation reform.** Cooperate on research and formulating coal-fired industrial boiler energy conservation reform accelerating policy and measure, with NDRC.

## (二) 质检总局开展的工作 Work carried out by AQSIQ

### 四是加强国际合作 Strengthen international cooperation

**加强中美锅炉能效标准合作。** Strengthening the cooperation on the boiler efficiency standards between China and the United States

2015年6月，国家质检总局与美国能源部决定就中国锅炉系统自愿性能效标准与两国企业开展合作，一年来的主要工作： In June 2015, AQSIQ and DOE decided to develop cooperation with the enterprises of the two countries on China boiler system voluntary energy efficiency standard , and the main work in the recent year is as below:

①**中美工业锅炉能效标准研讨会（促进会与ASME）**； Sino-US industrial boiler energy efficiency standards workshop(CPASE&ASME)

②**中国GB/T 10180及GB/T 10184与美国ASME PTC4对比研究（中国特检院与ASME）**； Comparative study on Chinese GB/T 10180 & GB/T 10184 and ASME PTC4(CSEI&ASME)

③**中美锅炉能效标准合作工作会议（10月11日，质检总局与美国能源部、中国特检院、促进会、ASME、伯克利实验室）** Sino-US boiler energy efficiency standard cooperation working meeting(AQSIQ, DOE,CSEI,CPASE,ASME, LBNL. Oct 11th,2016.)

——与美国能源部的合作非常有效，取得了重要的阶段性成果，有必要拓宽合作深度和广度。

The cooperation with the DOE is very effective and made important achievements, it is necessary to broaden the depth and breadth of the cooperation.



## 二、质检总局在创新监管机制方面的探索

---

**AQSIQ exploration in the aspect of supervision mechanism innovation**



## **(一) 特种设备基本情况 Basic condition of Special Equipment**

**根据《特种设备安全法》，特种设备是指对人身和财产安全有较大危险性的锅炉、压力容器（含气瓶）、压力管道、电梯、起重机械、客运索道、大型游乐设施、场（厂）内专用机动车辆。**

Based on Special Equipment Safety Law, special equipment is the equipment refers to the greater risk for personal and property safety including boiler, pressure vessel (including gas cylinder), pressure pipeline, elevator, lifting appliance, passenger ropeway, large amusement device, non-road motor vehicle in field (factory)

## **(二) 构建安全监察与节能监管相结合的工作机制**

### **Construction safety supervision and combined work of energy conservation supervision mechanism**

**2007年中国修订的《节约能源法》中，明确规定质检总局“对高耗能的特种设备，按照国务院的规定实行节能审查和监管”。**

In the revision of the ‘Energy Conservation Law’ issued in 2007, it explicitly stipulated that AQSIQ to implement the energy conservation audit and supervision in accordance with the state council stipulation to high energy consuming special equipment.

**2009年《特种设备安全监察条例》新增了对锅炉、换热压力容器和电梯等高耗能特种设备节能监管的**具体要求**，规定了节能审查和监管的**基本制度**。**

In 2009, ‘Regulations on Safety Supervision of Special Equipment’ added specific requirements of the energy conservation supervision for high energy consuming special equipment like boiler, heat exchanger and elevator and defined the basic system of energy audit and supervision.

## (二) 构建安全监察与节能监管相结合的工作机制

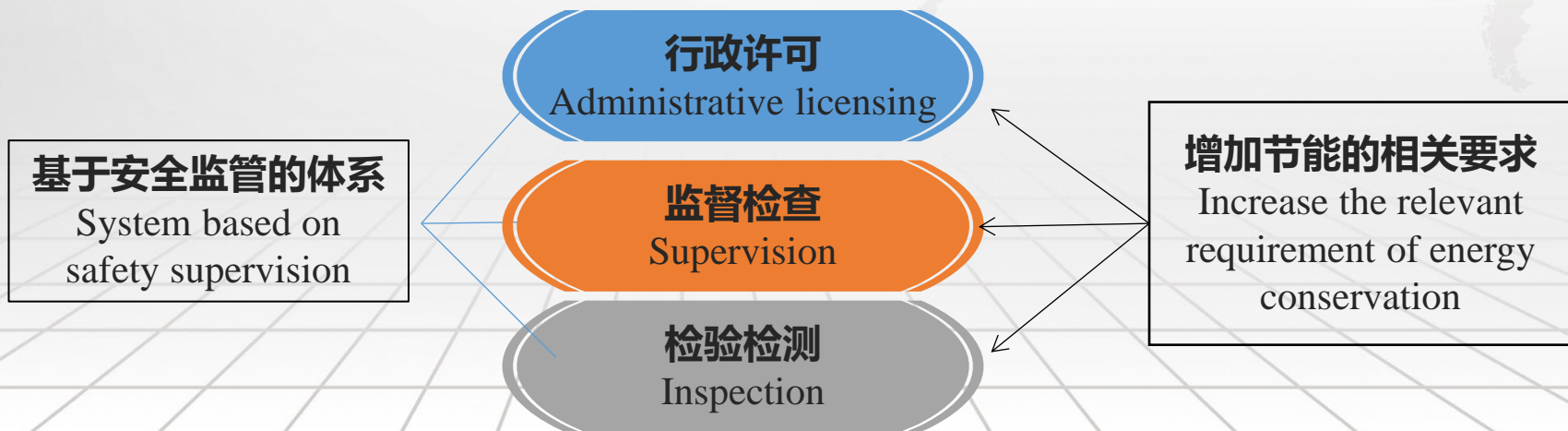
### Construction safety supervision and combined work of energy conservation supervision mechanism

经过60多年的发展，已经建立了特种设备安全监察的成熟体系

China has established the mature special equipment safety supervision system after 60 years of development

按照法律的新要求，创新监管机制（将安全监察与节能监管工作有机结合）

According to new requirement of law ——innovate supervision mechanism ( organic bond safety and energy conservation supervision )



## **(二) 构建安全监察与节能监管相结合的工作机制**

### **Construction safety supervision and combined work of energy conservation supervision mechanism**

**事实证明，通过这些年的努力，达到了预期的监管效果，做到了对锅炉产品的能效把关，并且促进了在用锅炉能效的提升。**

Proof by facts, it achieves the desired results through years of efforts, achieved the boiler products energy efficiency guarding and promoted the in-using boiler efficiency.



### (三) 进一步构建安全、节能、环保三位一体的锅炉监管机制

Establish trebling position integration boiler regulatory system of Safety, Energy conservation and environmental protection

新《大气污染防治法》赋予了质检总局对锅炉环保标准和要求的执行情况进行监督检查的新的重要职责。

The new 'Atmospheric Pollution Prevention Law' gives new important responsibility for boiler environmental standards and requirements executive condition supervision to AQSIQ

国家质检总局(AQSIQ)

国家发改委(NDRC)

环保部(MEP)

共同制定《锅炉节能环保监督管理办法》

Jointly formulating 'Supervision Administration Measure on Energy Conservation and Environmental Protection for Boiler'

将依托现有的监察体系，进一步构建安全节能环保三位一体的锅炉监管机制。

Relying on the current supervision system, to establish trebling position integration boiler regulatory system of Safety, Energy conservation and environmental protection.



A faint, light gray world map is visible in the background, centered behind the text. The map shows the continents of Africa, Europe, Asia, and Australia.

### 三、“十三五” 锅炉节能减排之工作思考

---

**Consideration about boiler energy conservation and emission reduction in 13th FYP**

A perspective grid of light gray lines is visible at the bottom of the slide, creating a sense of depth and space.

## **(一) 继续加强监管 Keep strengthening supervision**

### **(1) 依法落实高耗能特种设备节能环保基本制度，加大监督检查力度。**

To implement the basic energy conservation and environmental protection system for high energy consuming special equipment according to the law, enhance the strength of supervision and inspection.

### **(2) 充分发挥行政许可、监督检验等监管手段，对于国家明令淘汰或限制的锅炉等高耗能特种设备严格把关，禁止生产和继续使用。**

Give full play to the means such as administrative licensing, supervision and inspection adequately, to strictly control boiler and other high energy consuming special equipment which has been officially eliminated by the state, prohibited to produce and operate.

## **(二) 健全规范标准 Perfect regulation and standard**

### **进一步健全特种设备节能环保法规标准体系:**

To further perfect the law, regulation and standard system of special equipment energy conservation and environmental protection

- **会同有关部门加快出台《锅炉节能环保监督管理办法》。**

Together with the relevant departments to speed up formulating the ‘Supervision Administration Measure on Energy Conservation and Environmental Protection for Boiler’

- **加快修订高耗能特种设备相关规范标准，补充完善节能环保的内容和要求。**

Speed up revising high energy consuming special equipment related regulation and standard to replenish and perfect energy conservation and environmental protection requirements.

### **(三) 实施重点工程 Implement important projects**

#### **(1) 按照国家发展改革委的统一部署，继续推进燃煤锅炉节能环保综合提升工程。**

According to unified deployment of National Development and Reform Commission, continue promoting coal-fired boiler energy conservation and environment promotion comprehensive project.

#### **(2) 研究将多部门联合推进锅炉节能环保工作的经验推广到换热压力容器、电梯等其他高耗能特种设备。**

To research the working experience about multi-departments advance boiler energy conservation and environmental protection to popularize to other high energy consuming special equipment such as heat exchanger and elevator.

## (四) 加强部门联动 Strengthen government department linkage

锅炉节能减排是综合性工作，涉及多个部门，需统筹协调，形成合力。

Boiler energy conservation and emission reduction is a comprehensive work and it involved multiple departments which need to be planed and coordinated.

继续加强与国家发展改革委、环保部等主管部门的沟通协调，积极开展特种设备节能环保相关政策研究，通过加强部门联动，**将严格监管和政策激励有机结合**，形成有效的**激励约束机制**。

Especially to continue strengthening communication and coordination with NDRC and MEP to actively develop related research on energy conservation and environmental protection policy for special equipment, to organically combine the strictly supervision and policy incentives through strengthen government department linkage, will form an effective incentive and restrain mechanism.

## **(五) 深化国际合作 Deepen international cooperation**

**进一步深化中美锅炉能效标准合作，建立定期互访交流机制，在锅炉、换热压力容器、电梯等高耗能特种设备节能减排的政策法规、先进技术、人员培训等方面，进一步扩大交流合作。**

To further deepen cooperation on boiler energy efficiency standards between China and United States, and also to promote the establishment of regular exchange visit mechanism, and further expand exchange and cooperation at the area of policy and regulation, advanced technology, personnel training, etc content for high energy consuming special equipment such like boiler, heat exchanger and elevator energy conservation and emission reduction.



**祝各位来宾、各位代表在北京期间生活愉快，工作顺利！谢谢大家！**

**I would like to extend best wishes to everyone happy life and successful work in Beijing.**

**Thank you!**